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jc831 U.S. PTO
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	5925.36003
First Inventor or Application Identifier	Robert McKinnon, Jr.
Title	Meter Box Lid
Express Mail Label No.	EL640835565US

jc830 U.S. PTO
09/579830
05/26/00

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: **Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231**

1. [XX] * Fee Transmittal Form *(e.g., PTO/SB/17)* *(Submit an original and a duplicate for fee processing)*
2. [XX] Specification [*Total Pages* 8] *(preferred arrangement set forth below)*
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
3. [X] Drawing(s) *(35 U.S.C. 113)* [*Total Sheets* 5]
4. Oath or Declaration [*Total Pages*]
   a. [XX] Newly executed (original or copy)
   b. [ ] Copy from a prior application (37 C.F.R. § 1.63(d)) *(for continuation/divisional with Box 16 completed)*
      i. [ ] DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

** NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).*

5. [ ] Microfiche Computer Program *(Appendix)*
6. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

7. [XX] Assignment Papers (cover sheet & document(s))
8. [ ] 37 C.F.R.§3.73(b) Statement [ ] Power of Attorney *(when there is an assignee)*
9. [ ] English Translation Document *(if applicable)*
10. [XX] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
11. [ ] Preliminary Amendment
12. [XX] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
13. [XX] * Small Entity Statement(s) [ ] Statement filed in prior application, Status still proper and desired *(PTO/SB/09-12)*
14. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
15. [XX] Other: Letter, check

16. **If a CONTINUING APPLICATION,** *check appropriate box, and supply the requisite information below and in a preliminary amendment:*

[ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: _____ /_____

Prior application information: Examiner _____ Group / Art Unit: _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

[XXX] *Customer Number or Bar Code Label* 21,000 *(Insert Customer No. or Attach bar code label here)* *or* [ ] *Correspondence address below*

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Country	*Telephone*	*Fax*

Name (Print/Type)	Arthur F. Zobal	*Registration No. (Attorney/Agent)*	20,616
Signature	Arthur F. Zobal	*Date*	May 26, 2000

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STATEMENT CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) & 1.27(c))--SMALL BUSINESS CONCERN

Docket Number (Optional) 5925.36003

Applicant, Patentee, or Identifier: Robert McKinnon, Jr.
Application or Patent No.:
Filed or Issued:
Title: METER BOX LID

I hereby state that I am
☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN DFW Plastics, Inc.

ADDRESS OF SMALL BUSINESS CONCERN P.O. Box 648
Bedford, Texas 76021-0648

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small business concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416.

I hereby state that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention described in:

☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

If the rights held by the above identified small business concern are not exclusive, each individual, concern, or organization having rights in the invention must file separate statements as to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization having any rights in the invention is listed below:
☒ no such person, concern, or organization exists.
☐ each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

NAME OF PERSON SIGNING Thomas McKinnon

TITLE OF PERSON IF OTHER THAN OWNER Vice President

ADDRESS OF PERSON SIGNING PO BOX BEDFORD TX 76095

SIGNATURE Thomas McKinnon DATE 5/19/00

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May 26, 2000

Box New Appl. Fee
Assistant Commissioner For Patents
Washington, D. C. 20231

RE: Meter Box Lid
Our File: 5925.36003

Hon Commissioner:

Enclosed for filing in the U.S. Patent and Trademark Office is a patent application directed to the above identified Meter Box Lid. The application includes 5 pages of specification; two pages of claims 1-7; one page of an abstract; 5 sheets of informal drawings of Figures 1-10; and a Declaration and Power of Attorney. Also enclosed are an Assignment; a Statement Claiming Small Entity Status-Small Business Concern; a Utility Patent Application Transmittal Form; a Fee Transmittal Form; a check in the amount of $385.00 for the filing fee and for recording the Assignment; a Recordation Form Cover Sheet; an Information Disclosure Statement By Applicant; and a self-addressed, stamped, return post card.

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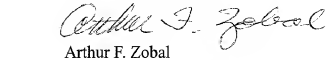
on May 26, 2000 By: Arthur F. Zobal

If any additional fees are required, please charge our deposit account No. 23-2770.

Respectfully submitted,



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Attorney for Applicant

Docket No. 5925.36003

"METER BOX LID"

SPECIFICATION

Background of the Invention

Field of the Invention

The invention relates to a removable lid for covering a utility box such as a water meter box.

Description of the Prior Art

In the past, utility boxes such as water meter boxes have been made of concrete or plastic with lids formed of the same material. U.S. Patent Nos. 2,883,853, 4,163,503, 4,726,490, 5, 423, 448, 5,394,601, and 5, 791,098 disclose different types of lids.

Summary of the Invention

It is an object of the invention to provide a new and useful, strong, heavy duty lid for a utility box and which may be used on concrete or plastic boxes. The lid comprises a member formed of a plastic material with elongated recesses formed in the lower surface which minimizes breakage of the lid. The recesses are spaced inward of the outer edges of the lid member. The recesses are generally parallel to each other and have lengths equal to a substantial portion of the length of the lid along which the recesses extend.

Brief Description of the Drawings

Figure 1 illustrates the upper side of one of the lids of the invention.

Figure 2 illustrates the lower side of the lid of Figure 1.

Figure 3 illustrates the upper side of another lid of the invention.

Figure 4 illustrates the lower side of the lid of Figure 3.

Figure 5 illustrates the upper side of another lid of the invention.

Figure 6 illustrates the lower side of the lid of Figure 5.

Figure 7 illustrates the upper side of another lid of the invention.

Figure 8 illustrates the lower side of the lid of Figure 7.

Figure 9 is a cross-sectional view of Figure 2 taken along lines 9-9 thereof.

Figure 10 is a cross-sectional view of Figure 2 taken along lines 10-10 thereof.

Description of the Preferred Embodiments

Referring now to the drawings there is shown four lids 21, 21M, 61, and 61M which are compression molded from a suitable plastic material such as medium density polyethylene. Referring to Figures 1, 2, 9 and 10, the lid 21 comprises an upper side having a flat or planar upper surface 21U and a lower side having a flat or planar lower surface 21L. The upper and lower sides are rectangular with four edges 21A, 21B, 21C, and 21D. Formed in the lower surface 21L during the molding operation are two identical elongated, parallel recesses 23 and two identical, square recesses 27 and 29. The recesses 23 have outer edge 23A, 23B, 23C, 23D. The recess 27 has outer edges 27A, 27B, 27C, 27D. The recess 29 has outer edges 29A, 29B, 29C, 29D. Formed in the upper surface 21U during the molding process are two identical, circular recesses 31 and 33 which are generally aligned with the two square recesses 27 and 29 respectively. Also formed on each edge 21A, 21B, 21C and 21D are two spaced apart wedges 37 or lugs which extend outward from the upper surface 21U and taper downward to the lower surface 21L. The wedges 37 may be shaved or cut to the desired shape in order to allow the lid to fit into the top opening of the utility box. Also molded or drilled through the lid 21 is a finger hole 39 for gripping purposes to more easily allow the lid to be fitted to or removed from the utility box.

The purpose of the recesses 23 is to minimize breakage of the lid and the purpose of the recesses 27, 29 and 31, 33 is to receive remote reading equipment in the interior of the utility box and on the top of the lid 21. Apertures will be formed through the lid to provide an opening between the recesses 27 and 31 and to provide an opening between recesses 29 and 33 to allow connection between the interior an exterior equipment.

In one embodiment, the dimensions L1, L2, L3, L4, H1, H2, H3, H4, W1, W2, W3 and D in inches are about 16 ½, 14 ½, 10 ½, 12 ½, 1 ½, 1, 14/16, ¼, 2, 2 ½, 4 ¾, and 5 respectively.

Lids similar to lid 21 were produced but they did not have the recesses 23. If these lids were dropped on a hard surface, the lids would

crack in some instances. Also when a high vertical pressure was applied to the lids when they were supported at the outer edges, they would break. The problem was solved however, by forming the recesses 23 during the molding process. The lid of Figs 1, 2, 9, 10 was tested by dropping it on a hard surface and by applying a high pressure to its upper surface 21U with the outer edges of its lower surface 21L supported by means and the lid did not crack or break. It is believed that the improved results were obtained since the recesses 23 allowed a better heat transfer of the hot flowable plastic during the molding process and they enhanced curing of the plastic. The recesses 27 and 29 have solved the prior problem at least on the side of the lid on which they are located. The area of the lower surface 21L is greater than the total area of the recesses 23, 27, and 29 in the plane of the surface 21L.

Referring to Figures 3 and 4, the lid 21M is similar to lid 21 except that it does not have recesses 27, 29, 31, 33; or the opening 39; it has an opening 43 formed through the lid at its central portion with a cover 45 hinged to the upper surface 21U to allow manual reading of the meter in the utility box and it has three identical excesses 23. In Figures 3 and 4, the same reference numerals as used in Figures 1, 2, 9, and 10 identify the same components and except for the differences mentioned above, the dimensions of lid 21M are the same as lid 21. Referring to Figure 4, the outer recesses 23 are spaced about 2 ½ inches from the central recess 23. The opening 43 may have side dimensions in inches of 3 ¾ X 6 7/8. The lid 21M is compression molded from a plastic material such as medium density polyethylene.

Referring to Figures 5 and 6, the lid 61 is compression molded from a suitable plastic such as medium density polyethylene. It is similar to lid 21M except that it is longer; it does not have the central opening 43; it has 4 spaced recesses 23 and five spaced rows of circular recesses 63 in its lower side. The lid 61 has a flat or planar upper surface 61U, a flat or planar lower surface 61L; edges 61A, 61B, 61C, 61D; and wedges 67. The length, width, and height of the lid 61 in inches may be 26 ½, 15, and 1 ½ respectively. The recesses 23 have the same dimensions as recesses 23 of Figures 1 and 2. In the embodiment of Figures 5 and 6, adjacent recesses 23 may be spaced 3 inches apart. The round recesses 63 may have a diameter of 2 1/4 of an inch and a depth of 3/4 of an inch. Recesses 63 help perform the function of recesses 23.

Apertures 65 and 67 extend through the lid 61 and are used as a touch read hole for use for reading the meter in the box and ås a finger hole respectively.

Referring to Figures 7 and 8, the lid 61M is compression molded from a suitable plastic material such as medium density polyethylene. The lid 61M is similar to the lid 61 except that it has a central opening 71 with a hinged cover 73 for use for manual reading of the meter in the box. Apertures 65 and 67 are not employed and have in their place two circular recesses 63. In Figure 7 and 8, the same reference numerals identify the same components as shown in Figures 5 and 6. The dimension of the lid 61M may be the same as those of lid 61.

In the embodiment of Figures 1-10 the lengths of the recesses 23 are equal to a substantial portion of the length of the lid along which the recesses extend and are greater than one half of said lengths of the lid and are a little greater than ¾ of said lengths of the lid. For each lid, the area of the lower surface also is greater than the total area of the recesses 23 in the plane of the lower surfaces of the lid.

The median density range of the polyethylene used in forming the lids of Figures 1-10 is .938-.942.

Compression load tests were carried out on the lid of Figures 1-6, 9, 10 and on the lid of Figures 7 and 8. The tests were performed utilizing a 9" X 9" steel plate placed on the lid center. Prior to testing, each sample was placed on steel blocks around the perimeter of the lid to simulate the lip of the meter box.

Tests were performed on three lids of the embodiment of Figures 1-6, 9, 10. The three lids tested withstood a total load in pounds of 9380; 12,230; 8,910, respectively.

The lid of Figures 7 and 8 had a length of 26 inches and a width of 6 inches. Tests were performed on two lids of the embodiment of Figures 7 and 8. The two lids tested withstood a total load in pounds of 14,070; 12,070, respectively.

It appears that the lid of Figures 7 and 8 withstood a greater load since it did not have the recesses 27, 29, 31, 33 of the lid of Figures 1-6, 9, 10.

The lids described with respect to Figures 1-10 are all rectangular in shape. The plastic lids however may be circular or oblong in shape with planar upper and lower surfaces. All of these lids will have at least two parallel recesses 23 formed in their lower surfaces. The lengths of the recesses 23 will be equal to a substantial portion of the length of the

lid along which the recesses extend and greater than one half of said length of the lids. In addition, the area of the lower surface will be greater than the total area of the recesses 23 in the plane of the lower surfaces of the lid.

CLAIMS

1. A lid for a utility box comprising:

a member formed of plastic material and having spaced apart upper and lower sides and an outer edge,

said lower side comprising a lower surface,

a plurality of spaced apart recesses having outer edges at said lower surface which are spaced from said outer edge of said member such that said lower surface surrounds said outer edges of said recesses,

each of said recesses comprises a concave surface which extends from its said outer edges into said member,

the area of said lower surface being greater than the total area surrounded by said outer edges of said recesses.

2. The lid of claim 1, wherein:

said lower surface is a generally planar surface,

said upper side is a generally planar upper surface,

a plurality of spaced apart wedges formed on said outer edge of said member which extend outward of said outer edge at said upper surface and taper toward said lower surface.

3. The lid of claim 1, wherein:

said outer edges of each of said recesses comprise two spaced apart elongated outer edges and two spaced apart shorter outer edges,

said elongated edges of said recesses are generally parallel with each other,

said member has a given length along which said elongated edges of said recesses extend,

the lengths of said elongated edges of said recesses are greater than one half of said given length of said member.

4. The lid of claim 3, wherein:

said outer edge of said member is rectangular in shape and comprises a first pair of spaced apart edges and a second pair of spaced apart edges with said first pair of edges being transverse to said second pair of edges,

said elongated edges of said recesses are generally parallel with one of said pairs of edges of said member.

5. A lid for a utility box comprising:

a member formed of plastic material and having spaced apart upper and lower sides and an outer edge,

said lower side comprising a lower surface,

a plurality of spaced apart recesses having outer edges at said lower surface which are spaced from said outer edge of said member such that said lower surface surrounds said outer edges of said recesses,

each of said recesses comprises a concave surface which extends from its said outer edges into said member,

said outer edges of each of said recesses comprise two spaced apart elongated outer edges and two spaced apart shorter outer edges,

said elongated edges of said recesses are generally parallel with each other,

said member has a given length along which said elongated edges of said recesses extend,

the lengths of said elongated edges of said recesses are greater than one half of said given length of said member.

6. The lid of claim 5, wherein:

said outer edge of said member is rectangular in shape and comprises a first pair of spaced apart edges and a second pair of spaced apart edges with said first pair of edges being transverse to said second pair of edges,

said elongated edges of said recesses are generally parallel with one of said pairs of edges of said member.

7. The lid of claim 5, wherein:

said lower surface is a generally planar surface,

said upper side is a generally planar upper surface,

a plurality of spaced apart wedges formed on said outer edge of said member which extend outward of said outer edge at said upper surface and taper toward said lower surface.

ABSTRACT OF THE DISCLOSURE

The lid is used to cover a utility box which houses a meter such as a water meter. The lid is compression molded from a plastic material such as medium density polyethylene, and has a planar upper surface and a planar lower surface. A plurality of generally parallel spaced apart recesses are formed in the lower surface. The recesses are spaced inward of the outer edges of the lid and have lengths equal to a substantial portion of the length of the lid along which the recesses extend. The area of the lower surface of the lid is greater than the total area of the recesses in the plane of the lower surface.

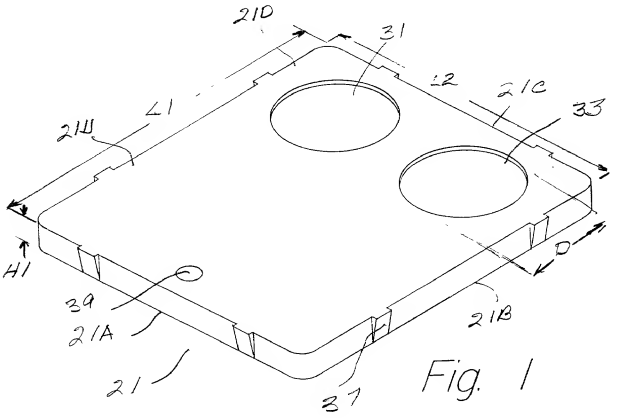


Fig. 1

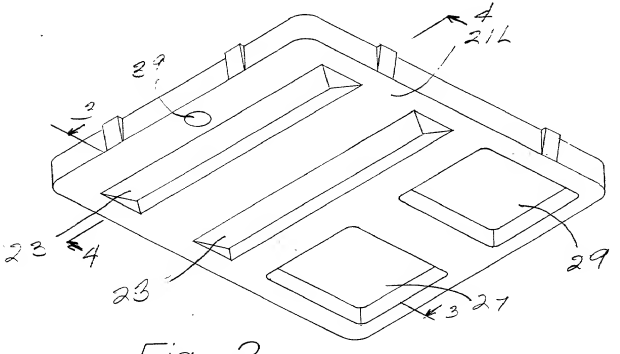


Fig. 2

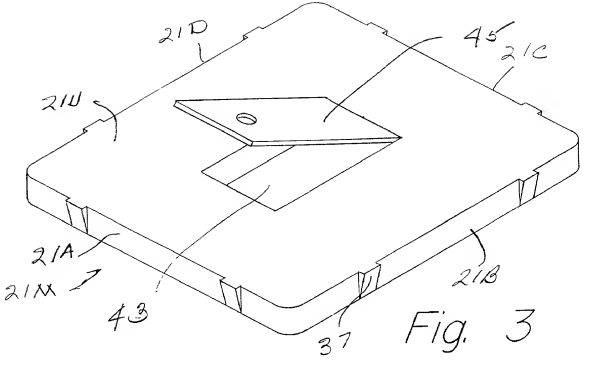


Fig. 3

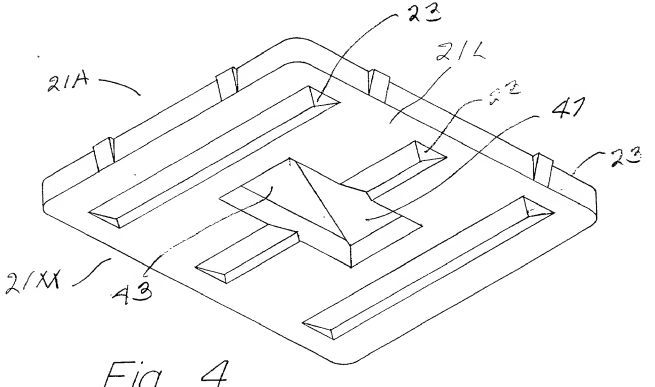


Fig. 4

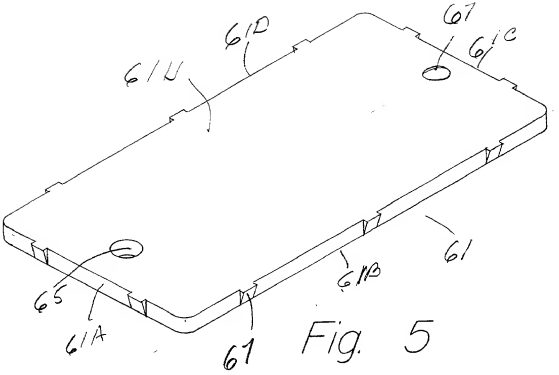


Fig. 5

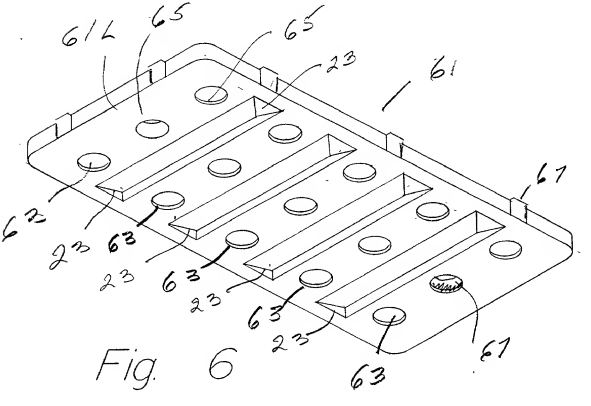


Fig. 6

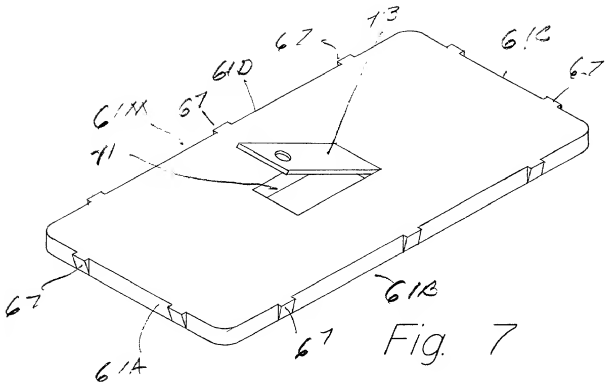


Fig. 7

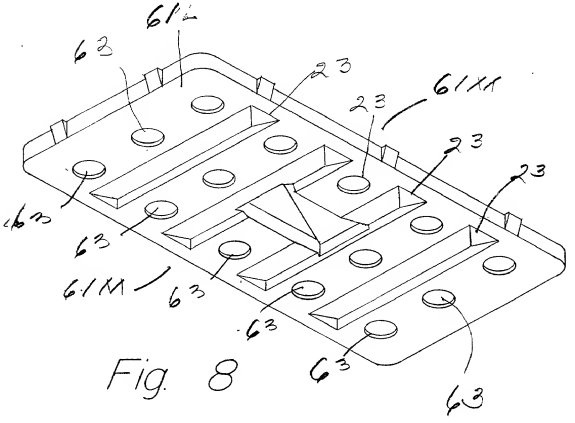
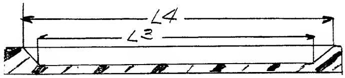


Fig. 8

Figure 9



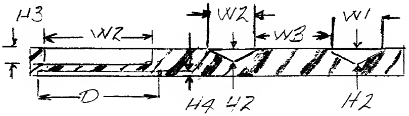


Figure 10

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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION

[X] Declaration Submitted with Initial Filing OR [ ] Declaration Submitted after Initial Filing

Attorney Docket Number	5925.36003
First Named Inventor	Robert McKinnon, Jr.
COMPLETE IF KNOWN	
Application Number	
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled :

METER BOX LID

(Title of the Invention)

the specification of which

[X] is attached hereto

OR

[ ] was filed on (MM/DD/YYYY) [ ] as United States Application Number or PCT International Application Number [ ] and was amended on (MM/DD/YYYY) [ ] (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code §119 (a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or §365 (a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]

[ ] Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)

[ ] Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

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DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s), or §365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number *(If applicable)*

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☒ Customer Number 21,000 → *Place Customer Number Bar Code Label here*

OR

☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☒ Customer Number or Bar Code Label 21,000 *OR* ☐ Correspondence address below

Name					
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Address					
City		**State**		**ZIP**	
Country		**Telephone**		**Fax**	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
Robert	McKinnon, Jr.

Inventor's Signature	Robert McKinnon Jr.					**Date**	5-28-98
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City	Bedford	**State**	TX	**ZIP**	76021-0648	**Country**	USA

☐ Additional inventors are being named on the ___ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto